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Edited by F. R. Moulton and Sam Woodley.

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Boys Departed; Men Will Return

For four years tens of thousands of American boys have been bidding their families and friends good-bye and embarking for adventures and dangers over-seas. They have gone from cities and villages and farms; from mansions of wealth and luxury, from modest wholesome homes, and from humbler abodes of the relatively poor. They have laid aside their sports and books, given up their positions in offices and industries and on farms, and donned the uniforms of their country.

These boys have left their homes with mingled feelings of sadness at parting and of elation at prospective travel and adventures. More often than their elders have realized, they have choked back tears as they have turned from familiar surroundings and possessions, knowing that they would not see them soon again, perhaps never. And from across the oceans they are now longing for sight of the Statue of Liberty or the Golden Gate, and especially for sight and sound of familiar things about their homes. They expect to find all the old places just as they left them, their families quite unchanged, and to be the same boys among the same friends again.

But this will not happen. Half a world and half a lifetime of experiences have intervened since they went away to war. In the course of their training they have traveled widely in their own great country, they have crossed the oceans, they have pitched their tents in the Tropics and in Arctic islands, they have fought in Europe, Asia, and Africa, and in the islands of the Far East. They and their comrades together have faced death bravely on the land, in the seas, and in the clouds. They have learned how precious and how fragile life is, and have struggled vainly to grasp its meaning and value. Without realizing it, they have been growing up.

Of course, not every boy who is in our armed services fits in with this description, even approximately. But many, probably a majority, of them do to a considerable degree. What they are doing, even better than what they are saying in their letters and publications, confirms it. The experience of former wars supports the opinion. Out of the death struggles on the Western Front in World War I came John McCrae's exquisite "In Flanders Fields" and Alan Seeger's somber "I Have a Rendezvous with Death."

> Take up our quarrel with the foe!
> To you from failing hands, we throw
> The torch—Be yours to hold it high!
> If ye break faith with those who die
> We shall not sleep, though poppies grow
> In Flanders Fields.

And our soldiers in this war who in mud and snow or on volcanic islands daily see their comrades fall are demanding that we shall not break faith with those who dare to die. They are not marching to martial music with waving flags. They crawl in ditches, they hide in bomb craters, the machine gun is their drum and the cannon their thunder. When they return and learn of the flourishing night clubs, the crowded theatres and retail shops, the fancied hardships of rationing, the cost-plus system of production, the hundreds of strikes by those making munitions or mining coal, the black markets, all the childish complaints of people who never heard the whine of a rifle bullet, the explosion of a bomb, or felt the pangs of hunger, will they then believe that full faith has been kept with those who have died?

These returning soldiers and sailors will measure this country against a new scale of values. In the first place, they will have lost any sectionalism they may have inherited, for they will have endured hardships and shared dangers with men from every part of the United States. As an illustration, the Air Transport Command crew which the day before last Christmas towed

a glider laden with mail and presents from India over high and dangerous mountains to our men on the Chinese front consisted of Major Heartwell, of Miami Shores; Captain Slayden, of Nashville; Flight Officer Coleman, of Salt Lake City; Lieutenant Heideman, of South Bend; and radio operator Bolas, of Chicago. Such men will not be boys from Main Street but citizens of a great country in whose future they will be deeply interested. In the first World War boys went away in the holiday spirit, singing and shouting and waving to admiring girls; in this war they have gone in silence and with sober faces, realizing that they have a rendezvous with death. This realization and their experiences are maturing them and preparing them to be a new generation of pioneers in this country, not to unexplored lands in the West but into the equally unexplored and more fabulously rich wildernesses of human relations on a continental scale. Those who have won battles by unselfish teamwork will not pursue the paths of pressure groups, for such roads lead inevitably to dissensions, enmities, struggles, and disasters. It may well be that our returning heroes will effect a moral regeneration of our people.

We often think of our country as though it were quite independent of the remainder of the world. Physically the boundaries of continental United States are clearly defined, but when we include such so-called "possessions" as Puerto Rico, the Philippines, Guam, the Canal Zone, etc., the borders of the picture become vague. Similarly, we often think of ourselves as being quite independent of other peoples, though practically every day of our lives we use materials originating in their countries and the products of their labor. The art of printing has made it *possible* for all literate peoples to communicate easily with one another; modern science and technology have made it *necessary* for them to do so. In the long future of human society this social consequence of science may well prove to be more important than all the comforts and luxuries that technology shall have provided.

However this may be, in the future this will be "one world" in a very real sense. It will continue to be composed of many distinct and quite different parts, but those parts must cooperate, as the widely differing parts of the body cooperate, or the whole world will sink into misery. Such is the present situation, with the mass of people of this country quite unprepared to meet it. But our returning soldiers and sailors are no longer boys shut in by local horizons, but men, men of the world. Of course, at the moment they, like weary and bruised football players who are two touchdowns ahead with ten minutes to go, personally hate their enemies. But, as always in past wars, those who have been at the front are the best balanced and most tolerant judges of their foes. After all, there is something that is above the beasts and that partakes of human nobility when a boy of any breed, however misguided he may be by circumstance of birth or Fate, goes knowingly to his death for a cause in which he believes. As Kipling expressed it,

> But there is neither East nor West, border nor breed nor birth,
> When two strong men stand face to face, though they come from the ends of the earth.

With the European phase of the war rushing toward its end, and with a very large measure of cooperation among the three Great Powers at Yalta, the future of our country and of the world looks more promising today than it has looked at any time in more than five years. It looks particularly promising because, though boys departed men will return, better qualified by experiences reaching into the deep meanings of life than we are to participate soon in guiding the future of this exceedingly complex world. To our returning soldiers and sailors: "We who are about to die salute you."—F.R.M.

A Message from the Front

Major M. B. Shimkin, M.D., a member of the staff of the National Cancer Institute and one of the principal contributors to the Association's recent volume entitled "Mammary Tumors in Mice," is on a mission of mercy in one of the most terribly devastated areas in Europe. From time to time he writes to the Association and comments on such matters as can be discussed under existing conditions. In a letter dated February 16, 1945, after comments on the Association's symposium volumes, the following paragraph appears:

> I have had so many experiences during the past three months that I am afraid it would take another monograph to record them. I shall have to await my return—and how I want that to be soon! War is no fun, and why adults have to engage in it every generation is hard to see—or are we adults? Thanks a lot for your unfailing help and co-operation. Here is to seeing you personally in not too distant future!

"War is no fun." What wanton cruelty and what immeasurable suffering those four words in this instance imply! When an expert in the dread field of human cancer recoils from the greater horrors inflicted on whole cities in the name of civilization, and sometimes in the name

of God, there remain no words so saturated with human misery as to be adequate for describing conditions existing in parts of Europe.

"Are we adults?" Are we humans? There is no single pattern of human beings. Human beings vary as widely in qualities as in the color of skin. They are aggressive, daring, avaricious, cruel, generous, beneficent, self-sacrificing, noble. All of these qualities, and many more, may explain why they have risen above their fellow creatures in dominating the earth. But they forget quickly. Long ago some men knew that "all they that take the sword shall perish with the sword" and that, in case of the individual, "the paths of glory lead but to the grave." In the case of a nation, history appears to show that the paths of glory lead but to extinction.

There is a Middle Class in Science

In the leading article in the January BULLETIN the point was made that "there is no middle class in science; the choice lies between the expert and the ignoramus," at least largely so far as formal education is concerned. The same conclusion was reached by the British respecting English education, as reported briefly in this issue under "Postwar University Education."

The statement that "there is no middle class in science" is challenged, at least as a general statement, by Mr. C. S. Johnson, of Detroit. As an illustration of what is going on in extracurricular education, he outlines briefly the activities of the Detroit Astronomical Society, of which he, a certified public accountant, has been a member for a number of years. He wrote:

> We invite outstanding teachers of astronomy and other scientists to lecture to us, and have frequently provided an audience of 500 or more. We encourage the building of telescopes and privately owned observatories. Our library contains a considerable number of modern scientific books, and our librarian is active in encouraging our members to read them. Publicity is given to the extension courses in astronomy conducted by the University of Michigan and our members are encouraged to enroll.
>
> There is only one requirement for membership, and that is an interest in astronomy. Our society can bring together for a lecture engineers, physicians, and attorneys; retired ships' officers and teachers; twelve-year-old school boys and girls, and corporation executives, all joining on common ground and enjoying the companionship.
>
> We are now enrolling prospective assistants, who will volunteer to work with and under the direction of professional astronomers at the coming solar eclipse in Canada. As so many of the professional astronomers are busy with war work, we are making an effort to assist those who can observe the eclipse. We are arranging for preliminary instruction to these prospective assistants.
>
> Also, we have inspired hundreds of our citizens to think about a planetarium for the city, and the Detroit City Plan Commission has consulted with the planetarium experts that we have brought to the city, and has accepted plans for a $555,000 Planetarium.

The foregoing paragraphs from Mr. Johnson's letter are quoted in full because they describe concretely a type of social activity going on throughout our country, voluntarily and without governmental direction or support, that is convincing evidence of our continuing intellectual and moral soundness. The leading article in the August, 1944, issue of the BULLETIN was entitled "Extracurricular Education," of which the work of the amateur astronomers in Detroit is only an illustration. Every type of activity referred to in that editorial, even in general terms, is worthy of an entire magazine article. If we ignore such extracurricular education, in these days of declining discipline and education in the home, and rely solely on public instruction that is steadily taking on the characteristics of the production line, we shall pass by something very precious for the development of character in our people.

Mr. Johnson approves of the suggestion in the article in the January BULLETIN on amateur astronomical societies that the Association "should make a survey of all of them [all amateur scientific societies in the United States] and a permanent record of their existence, purposes, and memberships," and expresses the hope that the final list will not be embalmed in unused archives. That suggestion in the January BULLETIN, of a survey of amateur scientific societies and clubs, was not an idle remark. It was a hint of what will be undertaken as soon as the demands of war on scientists is lightened, and it will be for constructive purposes that must await for their announcement the approach of the time when they can be taken up. But the time has come when the Office of the Permanent Secretary will welcome the names of volunteers from every city in the United States and Canada to assist in the survey when it can be made.—F.R.M.

Postwar University Education

A committee of the British Association for the Advancement of Science has made a comprehensive report on postwar university education. The report is not limited to education in British universities nor even to education in science. It has the scope appropriate for the educational problems before the world today. The report is published in Vol. III, No. 9, of the British Asso-

ciation's recently established quarterly journal, *The Advancement of Science.*

The American Association for the Advancement of Science has appointed, somewhat belatedly, a similar committee to assemble data relating to the training of men and women in science during the first years of the postwar period. There is disturbing evidence that the disruptions of education in science during the war and the prospective increase in demands for scientists after the war will result in serious shortages of adequately trained scientific personnel. This problem is so important and so great that the committee of the Association appointed to assemble data respecting it will need the cooperation of committees that are making investigations in several special fields of science. The times demand that scientists now exhibit a high order of educational statesmanship, if the word *statesmanship* may be so used, in directing the course of the future of science. In fact, as the British have realized, educational statesmanship should not be limited to science nor to universities of one country. All the world has become the stage on which the drama or tragedy of the evolution of human society will henceforth be played.

The recent interest of the British Association in education is nothing new. So long ago as 1855, a Parliamentary Committee, consisting of selected members of Parliament who were also members of the Association, presented a report on measures needed to improve the position of science in England. The committee recommended that the universities should require "a certain proficiency in physical science as a condition preliminary to obtaining a degree." In 1901 the British Association established the Educational Science Section under the presidency of Sir John Gorst, then vice president of the Council on Education. During the past forty years other distinguished leaders of British thought who were not specialists in natural science, including Dr. Temple, now Archbishop of Canterbury, have served as president of the Educational Science Section. As Sir Richard Gregory, President of the British Association, has said, the new committee on postwar university education "was constituted by the Council of the Association in the same spirit of unifying interests and crystallizing their elements into a single form." The conference on "Science and World Order," organized by the British Association and held in London three years ago, brought together representatives of education and science from more than twenty of the allied nations.

Among the many conclusions reached by the Committee and recorded in its 62-page report, the following will be of particular interest to members of the American Association:

Entry to universities should as a rule be deferred until after a year of approved national or international service, whether civil or military. . . .

This proposal would make the "modal" age of entry into universities not less than 19. Such a change would benefit the community as a whole, the universities, and the students who would bring to their academic studies and to their social intercourse greater maturity of mind and more experience of life. . . .

The award of entrance scholarships should depend, more than at present, upon a candidate's character (particularly his purposefulness, enterprise, initiative and originality) as well as upon his knowledge and intellectual qualities. . . .

Universities in which a system of tutorial superintendence is not at present in being should work towards such a system as will ensure the personal direction and oversight of every undergraduate's studies. . . .

It is through the informal teaching, supervision and direction provided by a complete tutorial system that the all-round development of the undergraduate can be most effectively secured and the impact upon him of the university environment most readily intensified. . . .

As a first step towards the reintegration of the university work of an increasing proportion of undergraduates, and at the same time clearing the universities of the charge of neglecting the non-vocational education of citizens while concentrating upon the vocational training of specialists, the Committee would welcome the institution of honours and pass schools of "Philosophy, Natural and Social."

These schools would seek to provide an outlook on the modern world seen as an integrated whole against a background of natural science. While, however, the course of study would include both the physical environment and the human environment (the natural sciences and the social sciences), the ultimate aim would be "to construct a system of ideas which bring the aesthetic, moral and religious interests into relation with those concepts of the world which have their origin in natural science."

The study of natural science in such a course must be wider than any of the specialist science schools: e.g., chemistry and physics should be taken together as part of "physical science," and general biology in place of the separate treatment of zoology, botany and physiology. . . .

Along with an outline of the physical world as conceived by the exact sciences, the first two years of the course would include the history of discovery, whether in natural science or scholarship, studied in relation to social and political history, particularly of the periods of the greatest advances in scientific thought. The study of man and society, including the contemporary international community, should be begun in the first year and would extend throughout the second year. . . .

The tendency of university studies to split up into a growing number of separate specialisms has already been noted by the Committee. They have recommended schools of Philosophy, Natural and Social, to meet "the charge of neglecting the non-vocational education of citizens," but it must be realised that the interrelation of science and the humanities in university teaching is important also for the students preparing for a professional vocation in science. Typically, such a student at present devotes his whole time to science, pure or applied. He has usually little knowledge of world affairs, or of the gov-

ernment even of his own country and locality. If he lives at home, as the majority of students do in most of the modern universities, his entire university life may, and often will, consist in attendance at science lectures and laboratories, with a break for lunch in the refectory. The rest of his "student" life is spent at home, where he may not find any stimulating discussion. Foreign scientists, scholars and students residing in the United Kingdom have been astonished that the future leaders of this democratic country should know so little about the workings of democracy or its achievement in social welfare.

This ignorance is particularly marked in students of the applied sciences such as engineering, chemistry or medicine, and it is suggested that, at least in their first year or two, students in Science Faculties should attend some discussion classes in subjects outside their specialism. . . .

So far as British universities are concerned, we have to start by frankly recognising that their present teachers are the product of a system which sharply divides training in technics on the one hand from the study of industrial, social and political organisation on the other. Very few scientific workers have much insight into social problems. Very few historians, economists or linguists have even a passing familiarity with the elements of natural science and its technical possibilities, or with scientific method in general.

It is because too few men of science as yet have this insight and too few humanists have such knowledge, that it would be a mistake to make attendance at courses in arts and commerce compulsory for students of natural science (or courses in natural science compulsory for students of commerce and arts).

For this reason we cannot force the pace. The direction in which we are moving is important; but the speed at which we move is limited by the materials to hand. We have to create the teachers who have the equipment to transform the existing educational system before we can produce far-reaching changes.

The Committee have come to believe that the greater part of the material which universities should make available for their specialist students, if they are to get a general view of the world as known by science, is much the same for all. . . .

It is true that the specialist in physics or chemistry or physiology can afford to miss a lecture or a class when his own subject—the subject he has studied most deeply—is under review in the course of a wide survey of science as a whole. But the wide survey is not on this account less necessary to the needs of the specialist in any one branch of natural or social science. The present section of the Committee's final report, therefore, goes beyond the "science for non-scientists" fore-shadowed in the Interim Report. It treats of "Science for All." For each alike, the university should provide a stimulus and an opportunity to integrate one's own special or partial interest, whatever it be, with a philosophic outlook on the whole world of things and people. This is not because all knowledge is valuable "for its own sake": Whitehead has warned us once for all against the "horrible burden of inert ideas." Why then? Partly because, thanks to science, the outlook of modern philosophy recognises that the truth as we see it is not more than a projection of ultimate truth: most of the facts we think we know are only hypotheses, consistent with experience up to the present time and liable to revision in the light of new experience. But chiefly, because the task of education includes that of fitting a person for his environment, spiritual, human and material; and this means to the individual, well-being, and to the community, well-doing.

The Lancaster Branch of the Association

At the meeting held in Atlanta, Ga., in 1913, the Council of the Association authorized "the establishment of branches in places where the members are prepared to conduct organizations that will forward the objects of the Association." Of the several branches so far established, the one at Lancaster, Pa., has been the most successful. It was organized eleven years ago, and each year since that time it has arranged for a series of lectures on subjects of wide scientific interest.

The Lancaster Branch has proceeded on the simple theory that science is one of the greatest new things in the world and that people want to know about it. The officers of the Branch were confident that the public would support an organization that would secure scientists of distinction to present a series of nontechnical but authoritative lectures each year on recent progress in various fields of science. The lectures were open to members who paid nominal dues of $1.00 per year. With the minimum of organization machinery but with efficient operation of this minimum the membership went not only into the hundreds but to 1,800 in 1943–44. As a consequence of the expense of securing an auditorium large enough to accommodate so great a number, the limit on the number of members was set at 1,200 at the beginning of the 1944–45 season, at which it now stands.

The program for this season consisted of five lectures, one each month from November to March, inclusive. In the order of their delivery they were:

"Africa, Land of Mystery and Magic," by Mrs. Carl Akeley.

"The Romance of Glass," by Charles John Phillips, manager of the Electronic Sales Department of the Corning Glass Works.

"Your Life Tomorrow," by David O. Woodbury, lecturer and writer on science.

"The Medical Story of the Middle East," by Rear Admiral Charles S. Stephenson, U.S.N., who recently received the Naval Malaria Award for his work in the Middle East and Africa.

"The March of Science," by Dr. Gerald Wendt, science consultant for *Time, Life,* and *Fortune.*

One naturally inquires why the Lancaster Branch has been so successful. It flourishes in a prosperous industrial city of about 60,000 population, a stable and intelligent community in the

midst of a rich agricultural region. It has good schools and is the seat of Franklin and Marshall College. In one respect the Lancaster Branch has been noteworthy, and to this its high success may be ascribed. It has had competent and devoted officers who have served it continuously since its organization eleven years ago. They are: Jaques Cattell, *chairman;* C. C. Vogt, *vice chairman;* Frances A. Coventry, *secretary;* and H. M. Fry, *treasurer.* Probably there are a hundred other communities in the United States where something similar could be done in the period of increased interest in science that will follow the war.

A Message from Moscow University

A few months ago the Moscow State University sponsored a scientific conference to discuss the role Russian scientists might play after the close of the war in the development of science and culture throughout the world. Learning that this conference would be held, the Association cabled its greetings to our Russian scientific colleagues. The following reply was received through the Science Committee of the National Council of American-Soviet Friendship, Inc., of which Dr. L. C. Dunn is chairman. The address of the Council is 232 Madison Avenue, New York 16, N. Y.

Moscow State University thanks you and your colleagues for greetings sent to scientific conference on "Role of Russian Science in Developing of World Science and Culture." The University hopes the establishing of close relations between Soviet and American scientists will lead to speedy postwar development of world science which will use all its power for the benefit of progressive mankind.

Ilja Galkin, Rector, Moscow State University

Memberships of Long Standing

A correspondent recently raised the question whether members of the Association do not generally drop their memberships when they retire from active duty. This inquiry has resulted in an investigation that confirms the opinion that members of long standing cherish their connection with the Association and continue their journals to very advanced years.

The following statistics relate to members other than the 70 emeritus life members reported in the February issue of the *Bulletin,* the six emeritus annual members, and the 19 fifty-year members.

Aside from the life members of the various classes, the member of longest standing is Dr. Charles L. Parsons of Washington, who became a member of the Association in 1892, nearly 53 years ago. Dr. Parsons has been Secretary of the American Chemical Society since 1907, or nearly 38 years, which is more than half the life of the society. In 1892 the Association had only 2,054 members, and this number steadily declined to 1,721, in 1899.

Statistics for the year 1902 will serve as a fairly reliable basis for conclusions respecting the extent to which members continue their memberships after retiring. During 1902 the membership of the Association increased by 518, there being of course some losses by death and from other causes. The number of new memberships was probably about 600. The records of the Association show that 127 of them are still members after an interval of 43 years. Since most of the scientists who became members in 1902 were probably between 25 and 35 years of age, many of them will have died because the chances of survival decline as age increases. Yet 127 of the approximately 600 who became members of the Association in 1902 are members today. They include four Bigelows, Henry B., Harvard, Maurice A., Columbia, and Robert P., Massachusetts Institute, all zoologists, and S. Lawrence Bigelow, Michigan, chemist; A. F. Blakeslee, botanist, President of the Association in 1940; C. A. Browne, chemist, a vice president in 1931; A. J. Carlson, physiologist, President of the Association in 1944; Henry Crew, physicist, a vice president in 1905; N. M. Fenneman, geologist, vice president in 1923; Simon Flexner, medicine, a vice president in 1906, member of Executive Committee, 1921–24, and President of the Association in 1919; Moses Gomberg, chemist, a vice president in 1935; S. J. Holmes, zoologist, President of Pacific Division in 1939; Herbert C. Hoover, President of the United States, 1929–33; Edward Kasner, mathematician, a vice president in 1906; E. O. Lovett, mathematician, a vice president in 1907; C. E. McClung, zoologist, a vice president in 1927; W. C. Mendenhall, geologist, a vice president in 1924; George B. Pegram, physicist, a vice president in 1936; V. M. Slipher, astronomer, a vice president in 1933, and President of the Southwestern Division in 1923–24; Francis B. Sumner, zoologist, a vice president in 1938; T. Wayland Vaughan, oceanographer, President of the Pacific Division in 1931; and Robert M. Yerkes, anthropologist, a vice president in 1919.

Among the distinguished alumni (so to speak) of the class of 1906 are found such scientists as Eliot Blackwelder, geologist, a vice president in 1920; R. E. Coker, zoologist, chairman of the Division of Biology and Agriculture, National

Research Council, 1936–40; Pierre S. duPont; William K. Gregory, anthropologist, a vice president in 1931; Forrest Shreve, plant physiologist, President of the Southwestern Division in 1929; and Anthony Zeleny, physicist, a vice president of the Association in 1914.

The average membership of the Association for the past five years has been 23,350. During the same interval the average number of members lost from deaths and resignations has been 1,400. Although these have been war years when it might be expected that the percentage of members lost from deaths and resignations would increase, the opposite has been the case; only once in eight years has the percentage loss for these reasons been as low as in 1944, when the demands of the war were at their maximum.

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The Institute of Mathematical Statistics

The Institute of Mathematical Statistics was organized on September 12, 1935, during the joint meetings of the American Mathematical Society and the Mathematical Association of America in Ann Arbor, Mich. At that time the *Annals of Mathematical Statistics,* founded by Prof. H. C. Carver and edited by him until 1938, was in its sixth year and had already established an important place for itself throughout the scientific world as the only journal devoted to mathematical statistics. The number of workers, students, and other persons interested in the field of mathematical statistics more than justified the formation of a society to further their scientific interests. It was also evident that the *Annals of Mathematical Statistics* should have the organized support of the people it was designed to serve. Professor Carver and Dr. A. L. O'Toole had drafted a constitution and a set of by-laws for the new society, and these were discussed by a group which included very nearly all the persons then prominent in mathematical statistics in the United States. Prof. H. L. Rietz became the first president and Prof. A. T. Craig the first secretary.

The founding of the Institute took place very near the time when the importance of mathematical statistics as a means of investigation was gaining really general recognition in the many fields of learning for which it is fundamentally important. The entrance of more soundly trained statisticians into government service and the application of scientific quality control in industry were in their infancy. The new society was small and its members were under more than the usual obligations to hasten the day when the importance of their science and its usefulness should be fully and widely understood. The first directory of the Institute, published in December, 1937, listed 102 names. That of January, 1939, showed 129, and that of a year later, 182. By December, 1942, when the last directory appeared, 450 statisticians had become members. Such an accelerated rate of increase gives evidence of the success with which the Institute has met the needs that brought about its foundation. Under the present necessity of utilizing national resources in the most efficient manner, the vital services of mathematical statistics in industry, in government, and in many branches of research, lends added importance to the aims of the Institute and to its official journal.

As stated above, the *Annals of Mathematical Statistics* was founded by Prof. H. C. Carver in 1930. Until 1938 he served as editor and personally met considerable deficits. At that time the Directors of the Institute, through the good offices of Dean L. P. Eisenhart of Princeton University, secured from the Rockefeller Foundation a subvention of $4,000 to be expended over a three-year period, and the Institute then assumed full responsibility for its journal. The subscription list has grown from 221 names in December, 1935, to 750 in December, 1942, including in each case the members of the Institute. Four issues, comprising about 500 pages altogether, appear each year.

The *Annals,* under Professor Carver's editorship for its first eight years and then in the hands of the Institute's editorial board headed by Professor S. S. Wilks, has been from the scientific point of view a success from the start. It has been indispensable for students, and it has been the medium of publications of an increasing volume of the most important research in mathematical statistics. The present war, besides bringing about the loss of foreign subscriptions to the *Annals,* has had the effect of partially or wholly interfering with the maintenance of the older journals, all foreign, which devoted part of their space to research articles in mathematical statistics. Thus the *Annals* now has the double responsibility of making up for this lost space and of covering the greatly increased activity of Americans in its field.

Every worker concerned in any way with the use of statistical methods will find it invaluable in these times to have the newest methods, results, and ideas immediately available by reading the *Annals* instead of waiting for the slow process of finding the discoveries in use by others. Teachers of statistics have a

special responsibility for keeping informed of the latest developments, and they will find in the *Annals*, in addition to research articles, competent expositions of important topics and discussions of applications in specific fields, as well as material on the teaching of statistics itself.

The Institute has always maintained close relationships with other learned societies. It holds Christmas meetings jointly with the Allied Social Science Associations which include the American Statistical Association and the Econometric Society, and September meetings with the American Mathematical Society and the Mathematical Association of America. It became affiliated in 1940 with the American Association for the Advancement of Science and some joint meetings have been held with this society. Meetings thus occur in various parts of the country and members of the Institute have the opportunity to present and to hear papers on mathematical statistics, as well as to take part in informal discussion with other workers of similar interests. Not only have research papers in mathematical statistics been read at all these meetings, but a feature has always been joint sessions with the other societies in which there have been given expository papers on developments in statistical theory and applications, and original papers on applications of statistical methods in fields of interest to the members of the other groups.

A large number of the Institute members have entered the armed forces, while many others are in positions of responsibility in war industries and governmental agencies. Many are expending a major portion of their energies on research and consultation on war problems. Others are doing their share in providing necessary statistical education for both military and civilian workers.

Beginning in September, 1940, sessions devoted to the applications of statistical methods to the war effort have been a feature of the Institute's programs. A committee of the Institute has studied the ways in which statistics and statisticians can be most effectively utilized and has made recommendations as to how the Institute can cooperate with other agencies for this purpose.

The Institute provides for five classes of membership: Members, Junior Members, Fellows, Honorary Members, and Sustaining Members. Any one interested in statistical methods is invited to apply for membership. Junior membership is confined to undergraduate students. Members who are regarded as having made outstanding contributions to the development of mathematical statistics are elected Fellows of the Institute. The dues for members and Fellows are $5.00 per year, including a subscription to the *Annals*. Junior membership is open to undergraduate students for a maximum term of two years. The annual dues for Junior members are $2.50. There are no provisions for institutional membership in the Institute, but libraries and individuals may subscribe to the *Annals of Mathematical Statistics*. The present subscription rate is $5.00 per year.

Membership in the Association

Eligibility for Membership

Membership in the Association is open to all persons engaged in scientific work, whether in the fields of the natural or the social sciences; to all amateur scientists, whatever their special interests; and to all who desire to follow the advances of science and its effects upon civilization. Members having made substantial contributions to the advancement of science are eligible for election as fellows.

Dues and Publications

Membership dues are $5 per year, including subscriptions for the monthly A.A.A.S. Bulletin and either the weekly journal *Science*, now in its 101st volume, or *The Scientific Monthly*, now in its 60th volume. *Science* is a journal for professional scientists; the *Monthly* is a nontechnical journal for the intelligent public. The Association also publishes technical symposia and nontechnical books on science that are available for members at prices substantially below those to the public.

Organization and Meetings

The Association was founded in 1848, with an initial membership of 461. Papers in its early programs were classified as either natural philosophy or natural history. Now its work is organized under 16 sections and 190 associated societies having a total membership of over 500,000. Its annual meetings are the greatest regular gatherings of scientists in the world.

Nominations and Applications for Membership

Members may submit nominations for membership at any time, and persons desiring to become members can obtain membership application forms from the Office of the Permanent Secretary, the Smithsonian Institution Building, Washington 25, D. C.

Changes of Address

New addresses for the Association's record and for mailing the journals *Science* and *The Scientific Monthly*, as well as the A.A.A.S. Bulletin, should be in the Office of the Permanent Secretary, Washington 25, D. C., at least two weeks in advance of the date when the change is to become effective.

Officers of the Association

President, Charles F. Kettering; *Permanent Secretary*, F. R. Moulton; *General Secretary*, Otis W. Caldwell; Treasurer, W. E. Wrather.

Executive Committee: Anton J. Carlson, *Chairman;* Roger Adams, Otis W. Caldwell, Arthur H. Compton, Charles F. Kettering, Burton E. Livingston, Kirtley F. Mather, Walted R. Miles, F. R. Moulton, Elvin C. Stakman, and W. E. Wrather.